

**ABSTRACT**

The present invention provides non-invasive methods and compositions to differentiate, with a high level of sensitivity and specificity, swine that are genetically susceptible to diseases associated with F18 *E. coli* infection, from resistant swine.

- 5 DNA polymorphisms in the swine alpha (1,2) fucosyltransferase 1 (*FUT1*) gene were used to differentiate resistant from susceptible swine. The invention includes a polypeptide with amino acid substitutions, encoded by the nucleotide polymorphisms, a molecular diagnostic assay, and a kit for the differentiation, of *E. coli* F18-adhesion resistant, heterozygous (carrier) and homozygous susceptible pigs. The molecular test
- 10 identifies susceptibility to oedema disease and postweaning diarrhea with high sensitivity and specificity, therefore, is useful to swine breeder in their effort to enhance for resistance. Information on the polymorphisms of the present invention provides insight into causation and treatment of *E. coli* associated intestinal disorders.

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